LOW MANGANESE  
LOW FUME  
PREMIUM PERFORMANCE

Discover the new optimized combinations of our BLUESHIELD™ filler metals and ARCAL™ shielding gases

Helping you create a cleaner, safer, more productive working environment.
Air Liquide has launched a new breed of tubular wires that are Low in manganese while producing lower fume emissions. These new wires are now part of the BLUESHIELD™ product line combined with our optimized shielding gases which deliver exceptional results.

What influences the welding fume?

In recent years, regulatory bodies have enacted more stringent regulations and recommendations regarding the acceptable levels of manganese in welding fume. Several provinces in Canada have reduced their recommended Threshold Limit Value (TLV®) for manganese from 0.2 mg/m³ to 0.1 mg/m³ for inhalable particulate and 0.02 mg/m³ for respirable particulate.
What influences welding fume?

Air Liquide has launched a new breed of tubular wires that are low in manganese while producing lower fume emissions. These new wires are now part of the BLUESHIELD™ product line combined with our optimized shielding gases.

**The new standard of excellence**

**Engineered solutions**

**FLUX-CORED WIRE LA T-91 LMN**

**PREMIUM QUALITY**

- Low Fume, Low Manganese single-or multi-pass all position flux-cored wire
- Designed to weld carbon steels requiring mechanical properties down to -30°C (-20°F) when using ARCAL™ 211 and Ar/CO₂ shielding gases containing up to 80%Ar/20%CO₂
- Ideal for welding steel grades ASTM A36, A515 Gr. 70, A516 Gr. 70 and other fine grain steels.

**Exceptional Results**

- Up to 88% lower manganese in weld fumes when used with ARCAL™ 211**
  - Up to 88% lower manganese in weld fume when used with ARCAL™ 211 as compared to E71T1 with CO₂
  - Up to 64% lower manganese in weld fume when used with BLUESHIELD™ 8 as compared to E71T1 with BLUESHIELD™ 8

- Up to 80% fume reduction when used with ARCAL™ 211**
  - Up to 80% fume reduction when used with ARCAL™ 211 as compared to E71T1 with CO₂
  - Up to 46% fume reduction when used with ARCAL™ 211 as compared to E71T1 with BLUESHIELD™ 8

The LA T-91 LMN has been created to ensure welder health and safety. Its low manganese levels and low fume generation breaks new ground in consumable performance.

**ARCAL™ 211**

- Optimized blend of Argon with controlled additions of CO₂ and He
- Increases travel speed and wetting action
- Delivers the lowest fume emissions
- Increased melt-off rates and lower spatter level resulting in better productivity and decreased overall welding cost
- Superior mechanical properties and optimized bead profile
- The ideal “clean” alternative to standard CO₂ and Ar/CO₂ mixtures
- Create a cleaner, safer, more productive work environment by combining Arcal™ 211 with our low manganese and low fume filler metals

**LA T-91 LMN TYPICAL CHEMISTRY**

<table>
<thead>
<tr>
<th>WEIGHT %</th>
<th>C</th>
<th>Mn</th>
<th>P</th>
<th>S</th>
<th>Si</th>
<th>Ni</th>
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<tbody>
<tr>
<td>ARCAL™ 211</td>
<td>0.05</td>
<td>0.34</td>
<td>0.006</td>
<td>0.009</td>
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<tr>
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<td>0.004</td>
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<td>0.56</td>
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</table>

**Values based on controlled laboratory testing. Multiple shop process variables can impact results from application to application.**
**ENGINEERED SOLUTIONS**

**NEW**

**METAL-CORED WIRE LA C-6 LMN**

**FIRST IN ITS CLASS**
- Gas shielded, metal-cored arc welding (MCAW) electrode with Low Fume and Low Manganese emissions
- Intended to weld with BLUESHIELD™ 8, ARCAL™ M14 (ARCAL™ 14), ARCAL™ SPEED (ARCAL™ 21), ARCAL™ 211 and certain Ar/CO₂ shielding gas blends ranging from 80Ar/20CO₂ to 92Ar/8CO₂
- Exceptional weldability and sound mechanical properties
- Some of the lowest fume generation rates commercially available in low manganese E70C6M wires as specified and tested per AWS F1.2
- Well suited for structural steel fabrication, farm implement fabrication and general welding applications when concern for reduced weld fume and manganese emissions is priority.

**EXCEPTIONAL RESULTS**

**Up to 77% lower manganese in weld fumes when used with ARCAL™ M14 (ARCAL™ 14)**
- Up to 77% lower manganese in weld fume when used with ARCAL™ M14 (ARCAL™ 14) as compared to E70C-6M with 75-80Ar/Balance CO₂ shielding gas.
- Up to 60% lower manganese in weld fume when used with ARCAL™ M14 (ARCAL™ 14) as compared to E70C-6M with 92Ar/8CO₂ shielding gas.

**Up to 88% fume reduction when used with ARCAL™ M14 (ARCAL™ 14)**
- Up to 88% fume reduction when used with ARCAL™ 14 as compared to E70C-6M wires welded with 75-80Ar/Balance CO₂ shielding gas.
- Up to 42% fume reduction as compared to E70C-6M wires with the same shielding gas blend 75-80Ar/Balance CO₂.

To support a healthier and safer environment for welders, the LA C-6 LMN achieves significant reduction in fume generation rates.

**LA C-6 LMN TYPICAL CHEMISTRY**

<table>
<thead>
<tr>
<th>WEIGHT %</th>
<th>C</th>
<th>Mn</th>
<th>P</th>
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<th>Si</th>
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<tr>
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### SHIELDING GASES

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### FILLER METALS

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* LA T-91LMN-C* with 100% CO₂

### SAFETY PRODUCTS

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**ADFLO™ PAPR WITH SPEEDGLAS™ WELDING HELMET**

- Comes with lithium ion battery, high efficiency particulate filter and wide leather belt
- 8" x 4.25" clear visor viewing area
- Auto-Darkening Filter 9100X with 2.1" x 4.2" viewing area
- Shade 5 side filters that increase peripheral vision

**NEDERMAN FUME EXTRACTION**

| Arm length (m) | 3 |
| Electric plug  | US |
| Filter cleaning method | One way filter |
| Frequency (Hz)  | 60 |
| Power Voltage (V) | 120 |